

What is claimed is:

1. A system for configuring a power supply apparatus to supply a voltage optimized to tolerate a voltage range about a nominal operating voltage of a device, and comprising:

a utility voltage test component operable to test and communicate to a comparison component a present utility voltage value;

said comparison component operable to compare said present utility voltage value with a present nominal operating voltage value of said device;

a configuring component in data communication with said comparison component and responsive to said present utility voltage value falling within an upper half of a first range having a centre point higher than said present nominal operating voltage value and lower than an upper out-of-tolerance voltage value of said device, configuring said power supply apparatus to supply power at a voltage within said first range; and

said configuring component further responsive to said present utility voltage value falling within a lower half of a second range having a centre point lower than said present nominal operating voltage value and higher than a lower out-of-tolerance value of said device, configuring said power supply apparatus to supply power at a voltage within said second range.

2. A system as claimed in claim 1, and further comprising a hysteresis component for delaying operation of said configuring component until a threshold voltage value difference is signalled by said comparison component.

3. A system as claimed in claim 1, and wherein said power supply apparatus is an uninterruptible power supply.

4. A system as claimed in claim 1, and wherein said device comprises a data-processing device.

5. A system as claimed in claim 1, and wherein said power supply apparatus further comprises an alarm component operable to signal an alarm responsive to said present utility voltage value falling one of lower than said lower out-of-tolerance value and higher than said higher out of tolerance value.

6. A system as claimed in claim 1, and wherein said power supply apparatus further comprises a bypass circuit to connect said device directly to said utility supply voltage in case of failure of said power supply apparatus.

7. A method for configuring a power supply apparatus to supply a voltage optimized to tolerate a voltage range

about a nominal operating voltage of a device, and comprising the steps of:

testing by a utility voltage test component and communicating to a comparison component a present utility voltage value;

comparing, by said comparison component, said present utility voltage value with a present nominal operating voltage value of said device;

responsive to said present utility voltage value falling within an upper half of a first range having a centre point higher than said present nominal operating voltage value and lower than an upper out-of-tolerance voltage value of said device, configuring, by a configuring component, said power supply apparatus to supply power at a voltage within said first range; and

responsive to said present utility voltage value falling within a lower half of a second range having a centre point lower than said present nominal operating voltage value and higher than a lower out-of-tolerance value of said device, configuring, by said configuring component, said power supply apparatus to supply power at a voltage within said second range.

8. A method as claimed in claim 7, and further comprising a step of delaying operation of said configuring component via a hysteresis algorithm until a threshold voltage value difference is signalled by said comparison component.

9. A method as claimed in claim 7, and wherein said power supply apparatus is an uninterruptible power supply.

10. A method as claimed in claim 7, and wherein said
5 device comprises a data-processing device.

11. A method as claimed in claim 7, and wherein said power supply apparatus further comprises an alarm component operable to signal an alarm responsive to said present
10 utility voltage value falling one of lower than said lower out-of-tolerance value and higher than said higher out of tolerance value.

12. A method as claimed in claim 7, and wherein said power
15 supply apparatus further comprises a bypass circuit to connect said device directly to said utility supply voltage in case of failure of said power supply apparatus.

13. A computer program product, tangibly embodied in a
20 computer-readable medium, for configuring a power supply apparatus to supply a voltage optimized to tolerate a voltage range about a nominal operating voltage of a device, and comprising the computer program code steps of:
testing by a utility voltage test component and
25 communicating to a comparison component a present utility voltage value;

comparing, by said comparison component, said present utility voltage value with a present nominal operating voltage value of said device;

responsive to said present utility voltage value falling within an upper half of a first range having a centre point higher than said present nominal operating voltage value and lower than an upper out-of-tolerance voltage value of said device, configuring, by a configuring component, said power supply apparatus to supply power at a voltage within said first range; and

responsive to said present utility voltage value falling within a lower half of a second range having a centre point lower than said present nominal operating voltage value and higher than a lower out-of-tolerance value of said device, configuring, by said configuring component, said power supply apparatus to supply power at a voltage within said second range.

14. A computer program product as claimed in claim 13, and further comprising a computer program code step of delaying operation of said configuring component via a hysteresis algorithm until a threshold voltage value difference is signalled by said comparison component.

15. A computer program product as claimed in claim 14, and wherein said power supply apparatus is an uninterruptible power supply.

16. A method as claimed in claim 14, and wherein said device comprises a data-processing device.

5 17. A computer program product as claimed in claim 14, and wherein said power supply apparatus further comprises an alarm component operable to signal an alarm responsive to said present utility voltage value falling one of lower than said lower out-of-tolerance value and higher than said
10 higher out of tolerance value.

18. A computer program product as claimed in claim 14, and wherein said power supply apparatus further comprises a bypass circuit to connect said device directly to said
15 utility supply voltage in case of failure of said power supply apparatus.